

African Elephants: Ivory Substitution and Film Production

JINGHAN CAO

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Poaching has been contributing to the rapid decline of the African elephant population throughout the past decade. After noticing the species' endangerment, multiple countries and global organizations established treaties and regulations to constrain the worldwide ivory trade. Though the overall number of elephants killed has dropped in recent years due to the public's increased awareness of African elephant poaching, it is necessary to develop economic instruments that diminish the ivory in the market to eliminate the threat of poaching. In this research essay, we explain the reasons for the emergence of the ivory products market and ivory demands, and we will suggest two appropriate solutions other than the currently existing political approaches.

1 Introduction

African elephants are the largest land animals on Earth [1]. What we usually think of as African elephants include two species of elephants: African Forest Elephant and African Savanna Elephant. Even though they differ in their size, both species are threatened by poaching. The International Union for the Conservation of Nature Red List catalogs the forest elephant as critically endangered, while the savanna elephant as endangered [12, 9]. African elephants owe their tragic condition to slaughterers' obsession with a precious part of their body: ivory. Ivory is a hard and white material from the tusks of elephants. Its appearance and structure determine its sculpt-ability and ornamentation, and carvings from ivory appeared as early as 5500 BCE in Egyptian sculpture [4]. The sculptor used ivory to indicate the owners' social status and rights. For instance, the Khufu Statuette – a three-dimensional depiction of King Khufu – is one of the earliest ivory sculptures from ancient Egypt [7]. To this day, ivory is still a precious ornament and very expensive. In the Chinese black market, the price of raw ivory fluctuates from 0.65 to 10.73 dollars per gram due to different types of ivories[10]. The high cost of ivory is attractive to poachers, who risk breaking the law by slaughtering African elephants, removing their ivory, and selling them on the black market. Due to Bull elephants' tusks weighing six or seven times those of females, they become

usual targets of poaching, causing unbalanced sex ratios in some herds. There were more than 25,000,000 African elephants in 1500, yet the population declined rapidly from 1500 to 1900, and a 2013 report in PLOS ONE found that forest elephant populations had plummeted by 62 percent in less than a decade[12]. Seeing the uncontrollable trend of African elephants, several international association organizations introduced systems to restrict poaching; yet only 415,000 elephants are left today and around 20,000 are killed by humans yearly[12]. Therefore, relying on laws to restrict the human hunting of African elephants is not a reliable measure. Only a reduction in human demand for ivory and a crackdown on the ivory market can ensure African elephant population conservation.

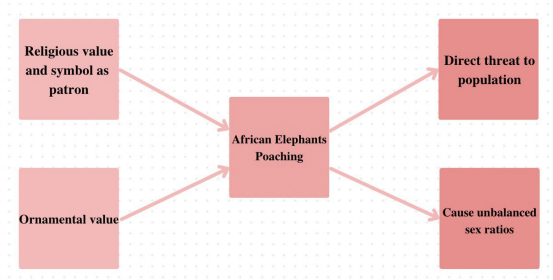


Figure 1: Reasons for poaching African Elephants and their results.

An existing policy for African elephant protection is CITES, Convention on International Trade in Endangered Species of Wild Fauna and Flora, published by the World Wildlife Fund in 1973. It is a global agreement among governments to regulate or ban international trade in species under threat and to protect biodiversity; 172 state members have signed the regulation. It created little impact on society. The primary problem is that different countries banned the ivory trade at different times, and it is hard to know if a decoration on a book or an ivory-made bracelet was produced before the government banned ivory trading [6].

2 A Substitute for Ivory: Tagua

Tagua (*Phytelephas aequatorialis* Spruce), known as the “vegetable ivory,” is a dioecious palm tree usually found in South American countries such as Ecuador. The species brings multidimensional support to the local economy: people utilize the inner mesocarp as fish bait and the roots for birth control. Most importantly, the mature tagua nuts, also the seeds, will solidify and turn creamy yellow, resembling ivory. The mature tagua seeds are The Ecuadorian people send the tagua seeds to buttons, toys, and handicraft industries, which are the main supports for the local economy. Because drought tagua seeds exhibit the same features as ivory in color, texture, and density, another common use of them is to substitute the elephant ivory product [8].



Tagua Nut [2]

Mature Tagua Nut [5]

Tagua Nut Product [3]

Since African elephant poaching is limited strictly by governments and CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), poaching African elephants is riskier for the poachers, leading to rising ivory prices and decreasing demand in the illegal market. At this time, garments made by tagua nuts can fill the market gap and attract more consumers to purchase them due to their relatively low cost. Compared to

African elephants, tagua is sustainable since they replenish every year, contributing substantially to the preservation of the animal. Promoting this vegetable ivory is also beneficial for boosting the local economy and raising the employment rate in Ecuador, in which 9.8% of the country’s total population of around 18 million live below \$3.20 per day, and malnutrition and diabetes are the major diseases that Ecuadorians encounter [11].

3 African Elephants Promotion

While substituting ivory with tagua nut is efficient, people’s harm to African elephants won’t decrease much in the long run: the authentic ivory products prices will double or even triple due to its rarity when vegetable ivory floods the market, and the poachers will try to kill even more elephants for the hard-earned treasure. Therefore, exporting tagua seeds is a temporary strategy to inhibit the African elephant population from dropping, and a more consistent method is to promote the species’ importance for humans and nature, expose the poachers’ means and reduce people’s interest and demand for ivory products ethically. One of the most widespread and straightforward promotion channels is to support film, television, and documentary productions related to African elephant conservation.

Movies typically reflect social issues, raise societal attention, and are accessible to most consumers. One of the most impactful documentaries of the 20th century is *The Cove*, which depicted the practice of corralling and slaughtering dolphins in Taiji, a small Japanese town. Taiji has more than 400 years of history of dolphin hunting, which caught the activists’ attention and led the director to create this film. Japan prohibited the film rigorously, yet the realistic scenes and the cruel methods that the Japanese used to capture incited a massive wave of worldwide dolphin protection.

In *Avatar: The Way of Water*, director Cameron also added scenes of human poaching Tulkun – a large and intelligent marine species native to the oceans of Pandora – within the main storyline. Due to the species’ similarity with whales and the hunters’ brutal hunting process, it is easy to connect this story branch with Japan’s actions.

Both films raise concerns about hunting endangered animals and impact society with great effort. Whale and dolphin meat consumption in Japan declined steadily after *The Cove* became popular; simultaneously, multiple countries established non-profit organizations to protest against Japan’s continued dolphin and whale hunting. This documentary also won the 2010 Oscars Academy award for best documentary [14]. On the other hand, *Avatar: The Way of Water* pushed the focus of this topic to a climax once again. People do not need astonishing data, but the bloody scenes are enough to make the audience empathize. Hence, while people are not accessible to see the decreasing population of animals in person and experience the poaching process, movies and documentaries can transmit the idea more intriguingly: reveal the truth by telling a story.

As a result, International Film Institutes should cooperate with globally authoritative animal protection institutions, such as WWF (World Wildlife Fund) and OIE (World Organization for Animal Health), to produce films that expose the threatened condition of African elephants and the ivory industry.

4 Conclusion

African elephants play a crucial role in nature as they are keystone species. However, they are endangered mainly because of the demand for ivory, which leads poachers to kill the elephants to capture their entire tusks.

The tagua nut, known as “vegetable ivory,” is capable of substituting ivory products in the market. It has similar color and texture to ivory, and the seeds are replenishable in South America. Besides, since tagua grows in Guatemala, promoting this alternation also benefits the local economy.

Finally, producing movies and documentaries related to African elephant protection is the most efficient and widely acceptable way to raise people’s concerns about animal conservation. Stories can always attract audiences; under the social-media-leading society, film and television works are relatively more persuasive and widely spread than pale and ineffective slogans.

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